

U.S. Army Corps of Engineers Web Site

Top Issues: Tillamook Bay

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US Army Corps
of Engineers
Portland District

Top Issues Tillamook Bay

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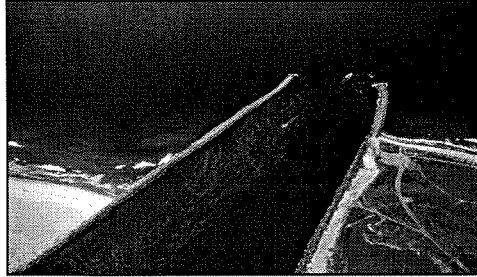
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Introduction



We have established this site to keep you informed about the U.S. Army's Corps of Engineers responsibilities and obligations at the entrance to Tillamook Bay. The Corps is charged by Congress to support navigation by maintaining and improving channels across the Nation.

As part of this mission, the Corps is authorized by Congress to maintain an 18-foot-deep channel over the ocean bar at the entrance of Tillamook Bay and an 18-foot-deep channel, which is three miles long and 200 feet wide, from Miami Cove to the entrance. The channel is supported by two jetties that together act like a pinched water hose nozzle to flush sediment out the narrow entrance and into deeper water. The jetties help the Tillamook Bay channel to maintain its depth of 18 feet at the entrance with little or no maintenance from the Corps.

To ensure the system is maintaining its proper depth, surveys are performed annually. Since 1976 when the Corps last performed maintenance dredging to the Tillamook channel, annual surveys have indicated that the channel has remained well within its authorized depth of 18 feet.

This year's annual survey showed that the channel was no shallower than 24 feet. The survey, originally scheduled for July, was pushed forward to the week of June 23 to provide channel-depth data to assist in the National Transportation Safety Board (NTSB) investigation of the charter boat accident on June 14, 2003.

The Corps is committed to providing our technical expertise to the NTSB during their investigation.

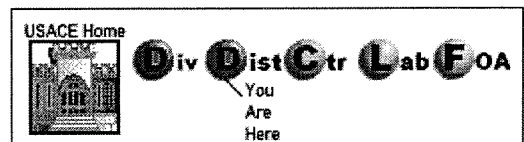
Please review our website for valuable information regarding the U.S. Army's Corps of Engineers responsibilities and obligations at the entrance to Tillamook Bay.

If you have comments, please email cenwp-pa@usace.army.mil.

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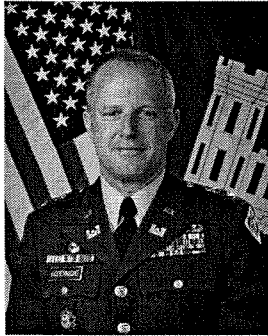


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Commander's Message



Col. Richard Hobernicht
Commander and
District Engineer

The accident on June 14 involving the Taki-Tooo at the entrance of Tillamook Bay is a terrible tragedy, and I offer my condolences to the families and friends affected by the accident.

The accident has raised questions and concerns about the Corps responsibilities at Tillamook Bay. Safety is a top concern of mine.

The Corps is cooperating with and assisting the National Transportation Safety Board investigation.

The Corps' history at Tillamook Bay dates back to the 1890s when improvements were undertaken. Congress authorized a permanent project in 1912. The congressionally authorized depth of the channel is currently 18 feet. The Corps surveys the channel annually, and since 1976, the surveys have shown the channel to be well within the authorized depths. So, dredging has not been necessary under our Congressional authority. Surveys of the Tillamook Channel, conducted the week of June 23, showed that the Tillamook Bay channel is maintaining itself at depths no shallower than 24 feet, which is at least six feet deeper than we are congressionally authorized to dredge.

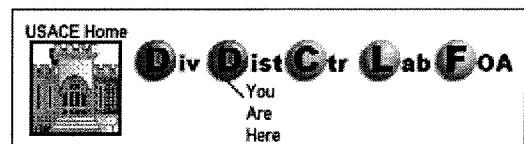
I invite you to explore this website to learn more about our roles and responsibilities for coastal structures and navigational safety along the coast and at Tillamook.

If you have questions or comments about what you've seen or heard, please e-mail the Portland District at cenwp-pa@usace.army.mil.

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The history of the Corps of Engineer's involvement at Tillamook Bay has been primarily navigationally oriented. The first survey was performed in 1887 and the earliest improvements were dikes in 1888, which improved access to the City of Tillamook. The following timeline depicts major Corps actions and authorizations throughout the projects history.

1892—The Corps began dredging a 6-foot-deep, 200-foot-wide channel between Bay City and Tillamook.

1897—A study was conducted to examine improving the bar entrance and was concluded to be unfavorable.

1912—North Jetty was authorized to 5,700 feet.

1917—In the early in the 20th Century, the navigation focus shifted to the entrance of Tillamook Bay, which resulted in the final construction of the original 5,400-foot-long north jetty, using 428,672 tons of rock, and a 16-foot-deep, 200-foot wide channel from the entrance to Bay City.

1921—The north jetty was repaired with 500 tons of rock placed near the shore end of the structure.

1925—The Bay City channel was abandoned when the project was modified to include an 18-foot-deep bar channel and an 18-foot-deep, 200-foot-wide inner channel from the entrance to a turning basin at Miami Cove. Another 16-foot-deep, 200-foot-wide channel also was added from the turning basin at Miami Cove to another turning basin in Hobsonville.

1933—The north jetty was reconstructed and extended to its fully authorized length of 5,700 feet, requiring 320,350 tons of rock in 1931.

1946—Minor repairs were made to the shore end of the jetty.

1948—The Corps began dredging a small boat basin and approach channel to 12 feet deep at Garibaldi.

1954—A breach developed at the Bay Ocean Peninsula and was closed by the Corps.

1955—Repairs were made to the north jetty near the shore end. Also, a breach at the beach-line of the north jetty, which was cut to bring a beached vessel through the jetty was repaired. Repair work used 5,535 tons of rock.

1962—The beach was built up on the north side of the jetty for 3,500 feet seaward of the beach-line. The jetty crest was at half tide and the other 800 feet was below the low water level.

1965—In order to help protect the Bay Ocean Peninsula from future breaches, the Corps began construction of the south jetty.

1965—The north jetty was rehabilitated and raised in height. The work required about 234,000 tons of stone.

1965—The south jetty was authorized to 8,000 feet.

1971—The south jetty was constructed to 3,695 feet. The contract was for construction of the first 5,000 feet of the jetty, but overruns caused by scour in front of the construction caused the work to be suspended. The work required 655,049 tons of stone.

1974—The south jetty was extended 2,830 feet requiring 783,944 tons of stone. The distance between the north and south jetties was reduced from 1,400 feet to 1,200 feet.

1979—The south jetty was extended to 8,000 feet.

1985—The head of the north jetty had received some damage from extreme wave conditions, and the outer portion of the south jetty had shown some subsidence. No repairs or rehabilitations were planned at that time.

1991—The outer 100 feet of the north jetty was repaired.

You may e-mail us your comments at cenwp-pa@usace.army.mil.

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It is the goal of the Portland District to provide the public with factual information about Tillamook Bay. Occasionally, statements are made (either by the Corps or by others) that lead to a misunderstanding of the facts. As we become aware of such misunderstandings, we will attempt to explain and clarify them on this site to enhance effective public dialog. For questions about these topics, please [e-mail](#) us.

Myth 1: The Corps has been neglecting to dredge the bar channel for nearly 30 years.

Facts: The last time the Corps dredged the bar channel was in 1976. However, the Corps can only dredge to the Congressionally authorized depth of 18 feet. Annual surveys since 1976 have shown that the channel has remained well within the 18-foot depth without dredging.

Myth 2: Depth of the channel may be as low as 15 feet.

Facts: The Corps performs annual depth surveys of the navigation channel. The surveys have indicated that the channel has remained well within the congressional authorized depth of 18 feet.

Myth 3: The deteriorated state of the jetties was to blame for the hazardous conditions that caused the Taki-Tooo accident.

Facts: The cause of the Taki-Tooo accident is being investigated by the National Transportation Safety Board. The Corps received \$300,000 in the fiscal year 2003 budget to study the jetties and develop plans and specifications for their repair. If money is appropriated, repairs could begin in 2004.

Myth 4: There is a considerable build up of sand and silt at the mouth of the bay, which increases surf and wave size.

Facts: The Corps performs depth surveys of the navigation channel each year. The surveys have indicated that the channel has remained well within the Congressional authorized depth of 18 feet.

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What is the authorized depth and area the Corps maintains?

Congress has authorized a channel 18 feet deep and of such width as can be practically and economically obtained through the bar. The authorization also allows a channel 200 feet wide and 18 feet deep from deep water in the bay to Miami Cove.

Has Tillamook Bay been zeroed out for dredging dollars because it is a shallow draft port?

Tillamook Bay is one of hundreds of small projects nationwide that were not funded in the President's proposal budget for fiscal year 2004. If future channel dredging is required, funding would require Congressional action.

When was the channel last surveyed?

The entrance and offshore approaches to Tillamook Bay were last surveyed the week of June 23. It was scheduled to be surveyed in July 2003 but was pushed forward to obtain valuable information to assist investigation efforts. Click [here](#) to see the results from the past two years of surveys.

What were the results of the survey? Is the channel deep enough?

The survey showed that the authorized entrance channel is deeper than its authorized depth of 18 feet. The shallowest part of the channel was 23 feet deep. In fact, many areas of the channel were much deeper than previous year. The channel is well within its designed limits. The Corps surveys the channel each summer. Click [here](#) to see the results from the past two years of surveys.

What steps can the channel users take to assure safe passage when maneuvering the bar?

The Corps of Engineers has several safety tips for people crossing the bar. Please check weather conditions carefully before you leave. Pay attention to Coast Guard advisories and warnings. Be very careful when choosing a departure time. Learn about and become aware of both waves and currents and their patterns of behavior. The Corps also would like to remind you to always wear your life vests. For more safety information, please visit the [U.S. Coast Guard Marine Safety Office](#) website.

What role does the Corps of Engineers play in safety at the entrance of Tillamook Bay?

Within the limits of the statutory language and available funding, the Corps maintains the entrance channel and jetties to the maximum extent possible. The Corps also identifies other avenues that should be pursued should an issue be raised that requires attention outside of normal operations.

What has the Corps done so far with the \$315,000 congressional add to study the jetty?

The \$315,000 congressional add was intended for the development of a maintenance report for the jetties. Digital terrain models of both north and south jetties have been created and analyzed to identify degree of damage and cause of damage along each structure. Ebb tidal shoal surveys have been examined over time to identify potential changes that could impact the required design of the repair of both jetties. Preliminary design analyses have been conducted addressing existing condition and three potential alternatives for each structure. A revetment also has been designed to protect the root of the north jetty. Investigations into geotechnical stability of the rock jetties and rock availability for repair also have been conducted. Hydrodynamic modeling of the entrance has been conducted to aid in defining the design climate for jetty repair and identifying the optimum length of repair. Preliminary cost estimates for jetty repair have been initiated. Possible jetty repair plans have been drawn up for consideration.

When will the maintenance report be complete?

September 2003.

After the maintenance report is complete, how soon can the public expect the jetties at Tillamook to be repaired?

There was no funding set aside for jetty repair in the president's tentative fiscal year 2004 budget. However, if construction funding is made available in the final 2004 budget and appropriated by Congress, repairs to both jetties could be conducted summer 2004.

Will repairing the jetties make the bar safer?

Yes. Repairs to the jetties will provide some improvements to conditions and the potential range in conditions at the Tillamook entrance.

Would navigation in and out of the entrance be safer if the bar offshore Tillamook Bay was dredged?

Many believe that dredging the channel deeper would improve navigation at the Tillamook bar; however, the Corps believes that dredging the offshore bar deeper may not improve the overall situation in Tillamook. Dredging the offshore bar could improve navigation over the bar, but could possibly degrade navigability at and within the jetty entrance and jeopardize the stability of the jetties. To reliably assess the overall effects of dredging the offshore bar at Tillamook entrance, a focused evaluation would need to be performed.

At present, the shallowest depths over the bar vary between 23 and 26 feet. This is five to eight feet below the authorized channel depth for the entrance.

During some offshore wave conditions, waves can break over the present bar configuration. The bar helps protect the jetty entrance from large waves by causing the waves to break offshore before the larger waves get to the jetty entrance. If the bar were dredged to prevent wave breaking over the bar, the result would be much larger waves at and within the jetty entrance.

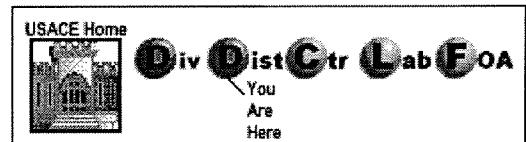
The large waves would likely make navigation within the entrance itself (between the jetties) less safe than at present. There would likely be other consequences arising from dredging the bar.

One of these possible consequences is that the bar serves as a "conveyer-belt" to bypass littoral sediment (beach sand) around the entrance. Altering the bar will likely result in significant erosion north or south of the jetties, likely jeopardizing the north jetty root. Another potential consequence is that larger waves at the jetty entrance could accelerate the deterioration of both jetty heads, which would cause additional hazards to navigation at the entrance.

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"The North Jetty, a line of rocks - some bigger than a human - was roughly 1,000 feet long when finished in 1915, after the steam-powered vessel Argo wrecked, but is now closer to 600 feet in length." (Eugene Register Guard, June 18, 2003)

Our Response: The north jetty was authorized in 1912 to a length of 5,700 feet. The jetty was originally constructed from 1914 to 1918. When completed in 1918, the jetty was 5,400 feet. In 1933, it was repaired and extended to its authorized length of 5,700 feet. Repairs to the north jetty also were conducted in 1946, 1955, 1965 and 1991. In 1991, the outer 100 feet of the north jetty was repaired. This repair brought the jetty to 5,460 feet, which is 380 feet short of the authorized length. Since 1991, the north jetty has receded 140 feet to a current length of about 5,320 feet.

"The Tillamook Bay bar is dangerous and should be dredged more often, to allow better clearance for boats and to blunt the turbulence of shallow waters. Intensive, regular dredging stopped in the late 1970s." (David Jordan, skipper of the Granada, Warrenton was quoted in The Oregonian, June 16, 2003)

Our Response: The Corps surveys the entrance each year, but maintenance hasn't been required since 1976. The channel at the mouth of Tillamook Bay is considered a self-cleaning channel, because it maintains its authorized depth of 18 feet with little maintenance being required.

Many believe that dredging the channel deeper would improve navigation at the Tillamook bar; however, the Corps believes that dredging the offshore bar deeper may not improve the overall situation in Tillamook. Dredging the offshore bar could improve navigation over the bar, but could possibly degrade navigability at and within the jetty entrance and jeopardize the stability of the jetties. To reliably assess the overall effects of dredging the offshore bar at Tillamook entrance, a focused evaluation would need to be performed.

At present, the shallowest depths over the bar vary between 23 and 26 feet. This is five to eight feet below the authorized channel depth for the entrance.

During some offshore wave conditions, waves can break over the present bar configuration. The bar helps protect the jetty entrance from large waves by causing the waves to break offshore before the larger waves get to the jetty entrance. If the bar were dredged to prevent wave breaking over the bar, the result would be much larger waves at and within the jetty entrance.

The large waves would likely make navigation within the entrance itself (between the jetties) less safe than at present. There would likely be other consequences arising from dredging the bar.

One of these possible consequences is that the bar serves as a "conveyor-belt" to by-pass littoral sediment (beach sand) around the entrance. Altering the bar will likely result in significant erosion north or south of the jetties, likely jeopardizing the north jetty root. Another potential consequence is that larger waves at the jetty entrance could accelerate the deterioration of both jetty heads, which would cause additional hazards to navigation at the entrance.

"Depths at the Tillamook Bar may be as shallow as roughly 15 feet -- but the water is even

less deep in the troughs between large, cresting waves. Some fishing boats hit bottom." (The Oregonian, June 16, 2003)

Our Response: The Corps surveys the entrance each year, and results have shown that the channel has maintained itself at depths deeper than 18 feet. The survey conducted this summer showed that there were no areas within the channel shallower than 24 feet. Maintenance hasn't been required since 1976. The channel at the mouth of Tillamook Bay is considered a self-cleaning channel, because it maintains its authorized depth of 18 feet with little maintenance being required.

Many believe that dredging the channel deeper would improve navigation at the Tillamook bar. However, the Corps believes that dredging the bar deeper would not improve the situation in Tillamook. Dredging the offshore bar could improve navigation over the bar, but would likely degrade navigability at and within the jetty entrance and could possibly jeopardize the stability of the jetties.

At present, the shallowest depths over the bar vary between 23 and 26 feet. This is five to eight feet below the authorized channel depth for the entrance.

"...the U.S. Army Corps of Engineers hasn't repaired the deteriorated jetties that help push sand from the bar area into the ocean since 1976 ..." (Eugene Register-Guard, June 18, 2003)

Our Response: While the south jetty has not been repaired since its construction in 1979, the North Jetty was last repaired in 1991.

The north jetty was authorized in 1912 to a length of 5,700 feet. The jetty was originally constructed from 1914 to 1918. When completed in 1918, the jetty was 5,400 feet. In 1933, it was repaired and extended to its authorized length of 5,700 feet. Repairs to the north jetty also were conducted in 1946, 1955, 1965 and 1991. In 1991, the outer 100 feet of the north jetty was repaired. This repair brought the jetty to 5,460 feet, which is 380 feet short of the authorized length. Since 1991, the north jetty has receded 140 feet to a current length of about 5,320 feet. However, there is about 2,850 feet of damaged areas along the entire jetty.

The south jetty was authorized to 8,500 feet in 1965. Construction began in 1971. In 1979, the south jetty was completed to 8,000 feet, which is 500 feet short of its authorized length. Since 1979, the south jetty has eroded about 60 feet in length to a length of 7,960. However, there is about 3,650 feet of damaged areas along the entire jetty.

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US Army Corps
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Public Affairs Office

News Release

Release Number: 03-101
Dated: June 26, 2003
For Additional Information
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Corps survey finds Tillamook channel in good condition

Portland, Ore. -- A bathymetric survey of the Tillamook Bay channel was performed June 23 to 25 by the U.S. Army Corps of Engineers. The survey shows the navigation channel is deeper than the Congressional authorize depth of 18 feet.

The survey covered the channel and surrounding areas from the Miami Cove out past the entrance bar. Originally scheduled for later in the summer, the survey was pushed forward to this week to obtain channel depth data to support the National Transportation Safety Board investigation of the tragic charter vessel accident June 14.

"These surveys tell the Corps whether or not the channel requires dredging each year," said Debby Chenoweth, chief of Operations Division, Portland District U.S. Army Corps of Engineers. "This year's survey results confirmed our expectations that the channel is deeper than what we are allowed to dredge.

"In fact, the channel is actually no shallower than 24 feet and is much deeper in some areas than it was last year," said Chenoweth. "This confirms that despite needing repairs, the Tillamook Bay jetties are doing their job by scouring sediment from the channel bottom without the dredging from the Corps."

Annual surveys have shown that the Tillamook Bay channel has not required dredging since 1976. This is due to the construction of the south jetty, which helped accelerate flows out the channel.

Results of the survey will be available Friday afternoon on the Internet at <https://www.nwp.usace.army.mil/issues/tillamook>. Please click on the "Publications" button for surveys from the last two years.

As part of the navigation mission, the Corps is authorized by Congress to maintain an 18-foot-deep channel over the ocean bar at the entrance of Tillamook Bay and an 18-foot-deep channel, which is three miles long and 200 feet wide.

The channel is supported by two jetties that together act like a pinched water hose nozzle to flush sediment out the narrow entrance and into deeper water. The jetties help the Tillamook Bay channel to maintain its depth of 18 feet at the entrance with little or no maintenance from the Corps. Over the years, the jetties have eroded some from constant force from the Pacific Ocean. However, there is a congressional ad in the fiscal year 2003 budget authorizing \$300,000 to study possible maintenance options at the North and South Jetties and to produce plans and specifications for repairs to the jetties. If money is appropriated, repair work could begin in the summer of 2004.

To ensure the system is maintaining its proper depth, surveys are performed annually. Since 1976 when the Corps last performed maintenance dredging to the Tillamook channel, annual surveys have indicated that the channel has remained well within its authorized depth of 18 feet.

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